

FUGRO TECHNICAL SERVICES LIMITED

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QUARTERLY ENVIRONMENTAL MONITORING & AUDIT SUMMARY REPORT

March 2019 – May 2019

Client : SANG HING – KULY JOINT VENTURE

Contract Name : Castle Peak Road Trunk Sewer and Tuen Mun Village Sewerage (Sewage Pumping Station at Lok Chui Street near Castle Peak Villas)

Contract No. : DC/2014/01

EP No. : EP-068/2000/A

Title of Project : Sewage Pumping Stations at Tai Lam Chung Tsuen Luen On San Tsuen, Tai Lam Valley and Lok Chui Street near Castle Peak Villas under the scope of “Tuen Mun Sewerage – Eastern Coastal Sewerage Extension”

Report No. : 0367/15/ED/1189

Prepared by : Wingo H. W. So

Reviewed by : Cyrus C. Y. Lai

Certified by : 
Colin K. L. Yung
Environmental Team Leader
Fugro Technical Services Limited

11 June 2019



Drainage Services Department
42/F., Revenue Tower
5 Gloucester Road
Wan Chai
Hong Kong

Attention: Mr Lee Wai Chung

Your reference:

Our reference: HKDSD202/50/105816

Date: 17 June 2019

BY EMAIL & POST
(email: wlee@dsd.gov.hk)

Dear Sirs

Agreement No.: PM 08/2014
Services for Independent Environmental Checker for
Construction of Lok Chui Street Sewage Pumping Station
Verification of Quarterly EM&A Summary Report (March – May 2019)

We refer to email of 11 June 2019 attaching a Quarterly EM&A Summary Report (March – May 2019) for the captioned project prepared by the ET.

We have no comment and hereby verify the captioned report.

Please do not hesitate to contact the undersigned or our Mr Ricky Lau at 2618 2831 should you have any queries.

Yours faithfully
ANEWR CONSULTING LIMITED

Adi Lee
Independent Environmental Checker

LYMA/LCCR/lhnh

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EXECUTIVE SUMMARY

- i. This is the 13th Quarterly Environmental Monitoring Audit (EM&A) Summary Report, it presents the environmental monitoring and audit works for the period from 1 March 2019 to 31 May 2019.

Construction Activities for the Reporting Period

- ii. During this reporting period, the principal work activities within the site included:

March 2019

- Reinstate and construct of access

April 2019 – May 2019

- Construction of vehicle access

Breaches of Action and Limit Levels for Air Quality

- iii. No Action or Limit Level Exceedance of 1-hr TSP monitoring was recorded in the reporting period.

Breaches of Action and Limit Levels for Noise

- iv. No exceedance was recorded at all monitoring stations in the reporting period.

Complaint, Notifications of Summons and Successful Prosecutions

- v. No Action or Limit Level Exceedance of noise monitoring was recorded in the reporting period.
- vi. No complaints, notification of summons or successful prosecutions were received in the reporting period.

Reporting Change

- vii. There was no reporting change required in the reporting period.

Future Key Issues

- viii. Potential environmental impacts due to the construction activities, including air quality, noise, water quality, waste, landscape and visual, will be monitored or reviewed. The ET will continue to implement the environmental monitoring & audit programme in accordance with the EM&A Manual and Environmental Permit requirements. The recommended environmental mitigation measures shall be implemented on site and regular inspections as required will be carried out to ensure that the environmental conditions are acceptable.



1. INTRODUCTION

1.1 Background

- 1.1.1 Contract No. DC/2014/01 – Castle Peak Road Trunk Sewer and Tuen Mun Village Sewerage (“the Project”) includes the construction of a sewage pumping station at Lok Chui Street near Castle Peak Villas as shown in **Figure 1**.
- 1.1.2 The environmental impact assessment (EIA) report (Tuen Mun Sewerage - Eastern Coastal Sewerage Extension) – EIA Report (Register No. AEIAR-034/2000) for the Project was approved by Environmental Protection Department (EPD) dated 7 June 2000. The EIA Report involves the construction of four sewage pumping stations at Tai Lam Chung Tsuen, Luen On San Tsuen, Tai Lam Valley and Lok Chui Street near Castle Peak Villas. The scope of this EM&A Manual focuses on the Sewage Pumping Station at Lok Chui Street near Castle Peak Villas in the EIA Report. The Project is designated under Schedule 2, section F3(b) and Q1 of the Environmental Impact Assessment Ordinance (EIAO). EPD subsequently issued the Environmental Permit (EP) EP- 068/2000 on 25 July 2000.
- 1.1.3 A Register of Change to Environmental Permit was submitted to EPD to register any change to the conditions in the EP for adoption of the latest design of the Pumping Station at Lok Chui Street and justify that the latest changes would not violate the conditions as stated in the approved EIA Report and EP based on the latest engineering design information. A Variation of Environmental Permit (VEP) EP-068/2000/A was issued on 10 April 2015 and it is the current permit for the Project.
- 1.1.4 The amended EP (EP-068/2000/A) is the current permit for the Project.
- 1.1.5 In accordance to EP-068/2000/A Condition 2.3 and 2.4, an updated EM&A Manual was duly certified by ETL and verified by IEC and submitted to EPD for approval on 18 January 2016.
- 1.1.6 The construction phase and EM&A programme of the Project commenced on 29 February 2016.
- 1.1.7 This is the 13th Quarterly Environmental Monitoring Audit (EM&A) Summary Report, it presents the environmental monitoring and audit works for the period from 1 March 2019 to 31 May 2019.



1.2 Project Organization

1.2.1 The Project Organization structure is shown in **Appendix B**. The key personnel contact names and numbers are summarized in **Table 1.1**.

Table 1.1 Contact Information of Key Personnel

Party	Position	Name	Telephone	Fax
Drainage Services Department, HKSAR (DSD)	Project Management	Mr. Lee Wai Chung	2594 7265	2827 8526
Engineer/Engineer's Representative (AECOM)	Resident Engineer	Ms. Jacqueline Chan	3127 5103	2441 1755
Independent Environmental Checker (ANEWR)	Independent Environmental Checker	Mr. Adi Lee	2618 2836	3007 8648
Contractor (SKLV)	Site Agent	Mr. Alan Lo	2674 3888	2674 6688
	Environmental Officer	Mr. Billy Wong		
Environmental Team (FTS)	Environmental Team Leader	Mr. Colin Yung	3565 4114	3565 4160

1.3 Construction Programme and Activities

1.3.1 The construction phase of the Project under the EP commenced on 29 February 2016.

1.3.2 The construction programme of the Project is shown in **Appendix A**.

1.4 Works undertaken during the Reporting Period

1.4.1 During this reporting period, the principal work activities within the site included:

March 2019

- Reinstate and construct of access

April 2019 – May 2019

- Construction of vehicle access

1.5 Status of Environmental Licences, Notification and Permits

1.5.1 A summary of the relevant permits, licences and/or notifications on environmental protection for this Contract is presented in **Table 1.2**.

Table 1.2 Status of Environmental Licences, Notification and Permits

Permit / Direction / License	Ref No	Valid From	Valid Till
Environmental Permit	EP-068/2000/A	10/04/2015	N/A
Notification of Works Under APCO	391923	06/08/2015	N/A
Wastewater Discharge Licence	WT00022654-2015	23/10/2015	31/10/2020
Registration as a Chemical Waste Producer	5111-421-S3879-01	02/09/2015	N/A
Billing Account for Disposal of Construction Waste	7022922	06/08/2015	N/A



2. ENVIRONMENTAL MONITORING & AUDIT REQUIREMENTS

2.1 Monitoring Parameters and Monitoring Locations

2.1.1 In accordance with the updated EM&A Manual, monitoring of the 1 hourly average of Total Suspended Particulates (TSP) levels for air quality and the A-weighted equivalent continuous sound pressure level Leq (30min) for the time period between 0700-1900 hours on normal weekdays for noise impact. The monitoring locations are shown in **Figure 2**.

2.2 Monitoring Methodology and Calibration

2.2.1 Monitoring equipment were conducted and calibrated regularly in accordance with the updated EM&A Manual. Copies of calibration certificates are attached in the appendices of the corresponding Monthly EM&A Reports.

2.3 Environmental Quality Performance Limits (Action and Limit Levels)

2.3.1 The adopted Action and Limit Levels for air quality impact and noise monitoring are presented in **Appendix C**.

2.4 Environmental Mitigation Measures

2.4.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and the EM&A Manuals. The implementation status of the mitigation measures during the reporting period is summarized in **Appendix G**.

2.5 Results and Observations

2.5.1 The weather conditions during the monitoring are presented in the Appendices of the corresponding Monthly EM&A Reports.

2.5.2 The monitoring data of 1-hr TSP are summarized in **Table 2.1**. Detailed monitoring data are presented in **Appendix D**.

Table2.1 Summary of 1-hr TSP Monitoring Results

Reporting Months	Monitoring Station	Average ($\mu\text{g}/\text{m}^3$)	Range ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
March 2019	LC6a	76	36-143	344	500
	LC9	68	32-107	335	
April 2019	LC6a	49	30-74	344	
	LC9	57	28-103	335	
May 2019	LC6a	74	44-118	344	
	LC9	62	37-104	335	



2.5.3 The noise monitoring data are summarized in **Table 2.2**. Detailed monitoring data are presented in **Appendix E**.

Table 2.2 Summary of Noise Impact Monitoring Results

Reporting Month	Monitoring Station	Leq _(30min) Range, dB(A)		Leq _(30min) Limit Level, dB(A)
		Measured	Corrected	
March 2019	LC6a ¹	66-72	61-67	75
	LC9	61-73	N.A	
April 2019	LC6a ¹	62-72	57-67	
	LC9	63-69	N.A	
May 2019	LC6a ¹	63-72	58-67	
	LC9	62-71	N.A	

Note:

- Leq_(30min) was measured at day-time (0700-1900) on normal weekdays.
- 1) A distance correction of -5dB(A) has been applied in monitoring data of LC6a according to baseline monitoring report (Appendix G).

2.5.4 No Action or Limit Level Exceedance of 1-hr TSP monitoring was recorded in the reporting period.

2.5.5 No Action or Limit Level Exceedance of noise monitoring was recorded in the reporting period.

2.6 Other factor influencing the monitoring results

2.6.1 There were no other noticeable external factors generally affecting the monitoring results in this reporting period.

3. ADVICE ON THE SOLID AND LIQUID WASTE MANAGEMENT STATUS

3.1.1 The Contractor has been registered as a chemical waste producer for the Project. Construction and demolition (C&D) material sorting was carried out on site. Receptacles were available for general refuse collection.

3.1.2 Monthly summary of waste flow table is detailed in **Appendix H**.



4. ENVIRONMENTAL SITE INSPECTION AND AUDIT

4.1 Site Inspection

- 4.1.1 Weekly site inspections and bi-weekly landscape and visual impact inspections were carried out to monitor the implementation of proper environmental pollution control and mitigation measures for the Project.
- 4.1.2 In the reporting period, site inspections were carried out on 7, 14, 22 and March 2019; 4, 11, 18 and 25 April 2019; and 2, 9, 16, 23 and 30 May 2019. The landscape and visual impact inspections were carried out on 7 and 22 March 2019; 4 and 18 April 2019; and 3, 16 and 30 May 2019.
- 4.1.3 Detailed of site inspections during the reporting period are summarized in the appendices of the corresponding Monthly EM&A Reports.

5. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

5.1 Environmental Exceedance

- 5.1.1 No Action or Limit Level Exceedance of 1-hr TSP monitoring was recorded in the reporting period.
- 5.1.2 No Action or Limit Level Exceedance of noise monitoring was recorded in the reporting period.
- 5.1.3 The summary of noncompliance (exceedances) of the environmental quality performance limits (Action and Limit levels) are shown in **Table 5.1**:

Table 5.1 Summary of noncompliance (exceedances)

Parameter	No. of Exceedance		No. of Exceedance due to the Project		Cumulative Project-to-Date
	Action Level	Limit Level	Action Level	Limit Level	
1-hr TSP	0	0	0	0	0
Noise Leq _(30min) dB(A)	0	0	0	0	0

5.2 Complaints, Notification of Summons and Successful Prosecution

- 5.2.1 No complaints, notification of summons or successful prosecutions were received in the reporting period.
- 5.2.2 Cumulative complaint log, summaries of complaints, notification of summons and successful prosecutions are presented in **Appendix F**.

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6. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

6.1 Implementation Status

- 6.1.1 The Contractor has implemented environmental mitigation measures and requirements as stated in the EIA Reports, the EP and the EM&A Manuals. The implementation status of the mitigation measures during the reporting period is summarized in **Appendix G**.
- 6.1.2 Based on the monitoring results and the implementation status of the mitigation measures during the reporting period, it is considered that the environmental mitigation measures implemented by the Contractor in the reporting period are effective.

7. FUTURE KEY ISSUES

- 7.1.1 Potential environmental impacts due to the construction activities, including air quality, noise, water quality, waste, landscape and visual, will be monitored or reviewed. The ET will continue to implement the environmental monitoring & audit programme in accordance with the EM&A Manual and Environmental Permit requirement. The recommended environmental mitigation measures shall be implemented on site and regular inspections as required will be carried out to ensure that the environmental conditions are acceptable.

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8. CONCLUSIONS

- 8.1.1 The construction phase and EM&A programme of the Project commenced on 29 February 2016.
- 8.1.2 No Action or Limit Level Exceedance of 1-hr TSP monitoring was recorded in the reporting period.
- 8.1.3 No Action or Limit Level Exceedance of noise monitoring was recorded in the reporting period.
- 8.1.4 In the reporting period, site inspections were carried out on 7, 14, 22 and March 2019; 4, 11, 18 and 25 April 2019; and 2, 9, 16, 23 and 30 May 2019. The landscape and visual impact inspections were carried out on 7 and 22 March 2019; 4 and 18 April 2019; and 3, 16 and 30 May 2019.
- 8.1.5 No complaints, notification of summons or successful prosecutions were received in the reporting period.

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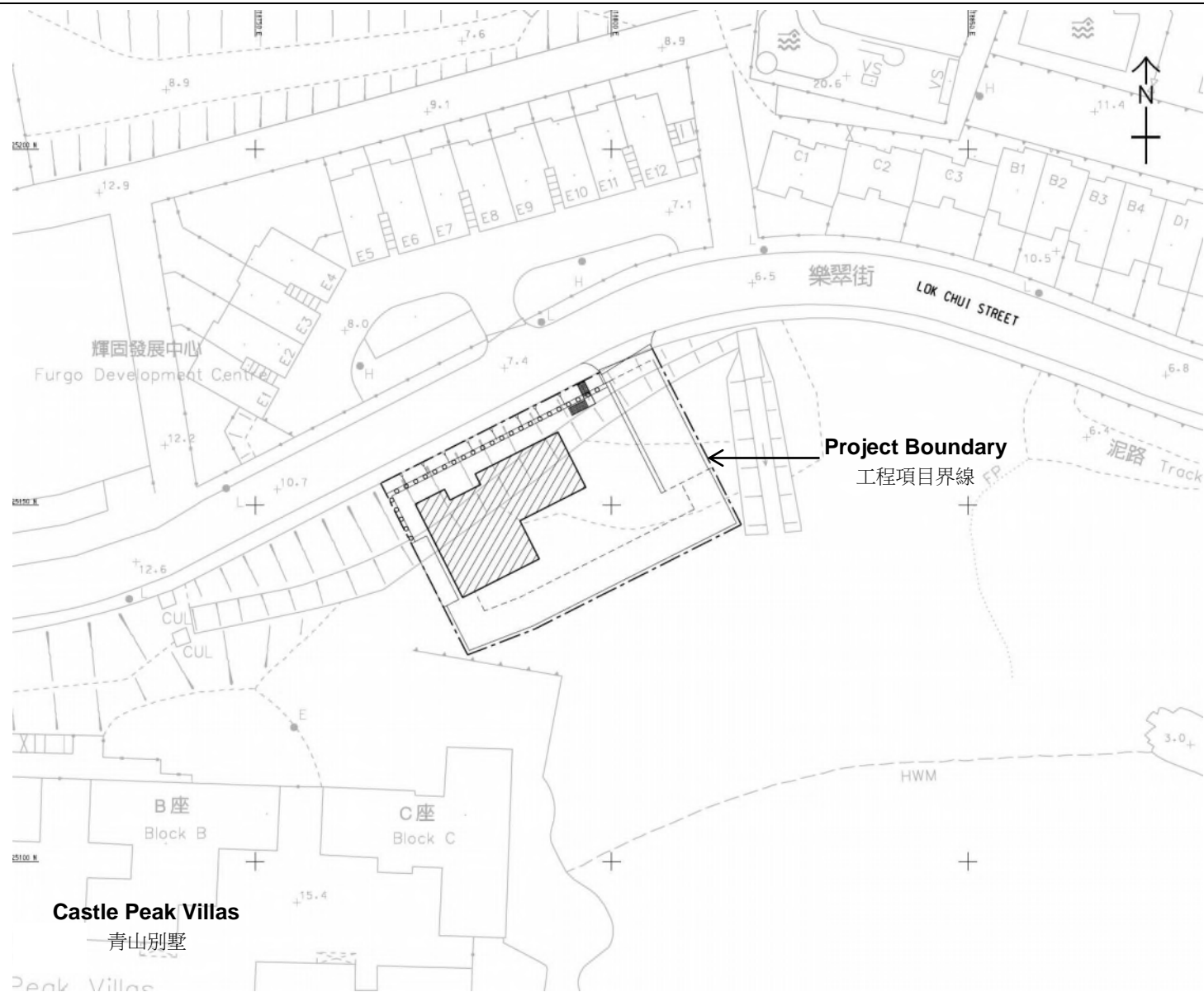
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Figure 1

Project General Layout



Location of the Proposed Sewage Pumping Station at Lok Chui Street near Castle Peak Villas
 位於樂翠街近青山別墅的擬建污水泵水站

Figure 1

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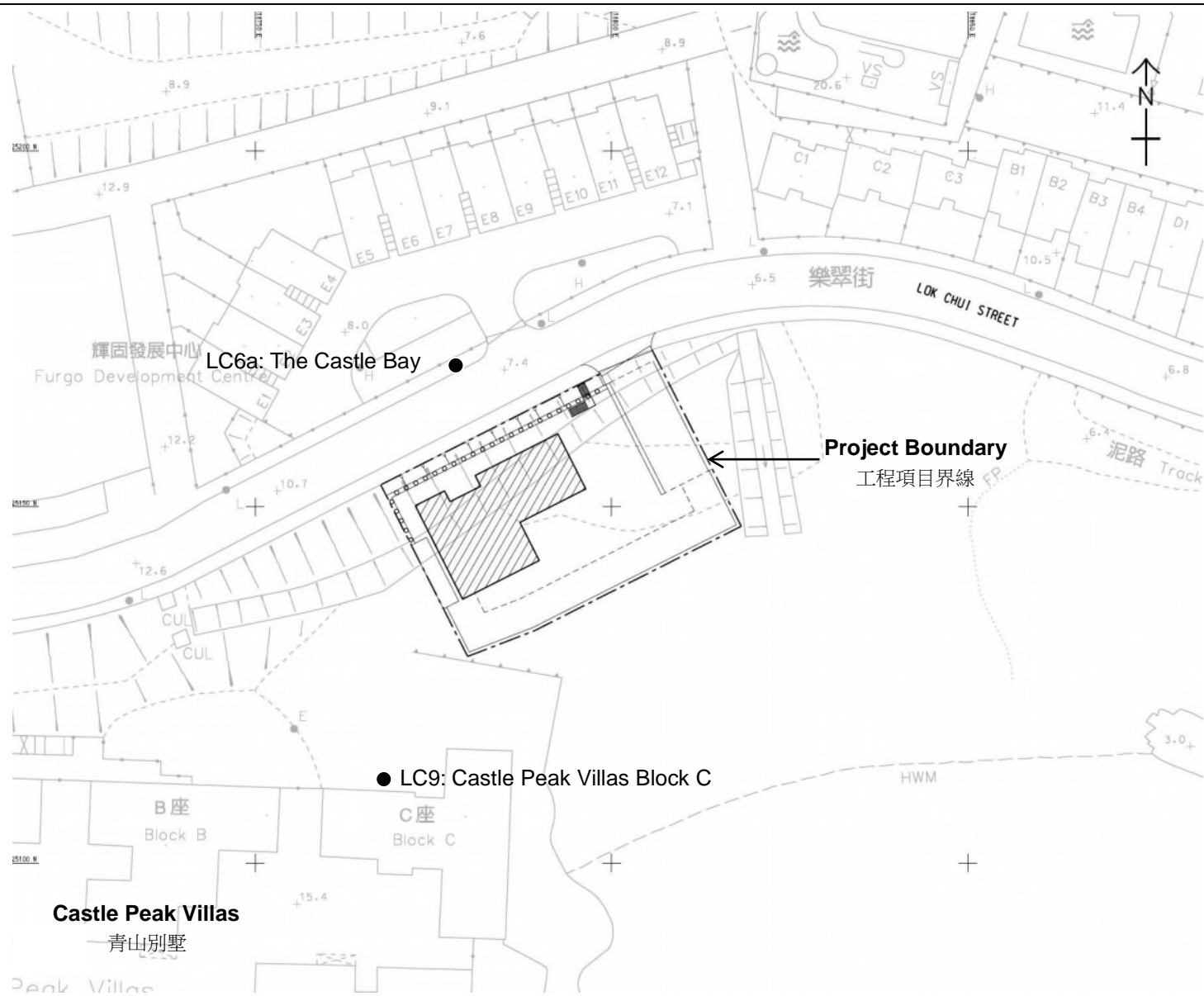
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Figure 2

Air and Noise Monitoring Locations



Air and Noise Monitoring Locations

Figure 2

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LC6a: The Castle Bay






LC9: Castle Peak Villas Block C



Note:

1) LC6a: The air and noise monitoring station is set at a point 1m from the exterior of the sensitive receiver fence wall, and set at a position 1.2m above ground. Façade measurement will be carried out for noise monitoring.

2) LC9: The air monitoring station is set at the top of parapet wall of sensitive receivers building and the noise monitoring station is set at a point 1m from the exterior of the sensitive receivers building façade and set at a position 5m above the ground.

- Legend:**
-  Proposed Air Monitoring Location
 -  Proposed Noise Monitoring Location
 -  1m from the exterior building façade

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Appendix A

Construction Programme

ID	Task Name	Baseline Duration	Duration	Baseline Start	Baseline Finish	Actual Start	Actual Finish	% complete	Start	Finish	Predecessors	15/10/15	2016	2017	2018	2019	2020
1301	Trial pits proposal	180 days	180 days	Sun 18/10/15	Thu 14/4/16	Sun 18/10/15	Thu 14/4/16	100%	Sun 18/10/15	Thu 14/4/16	129755,129855						
1302	Design of Temporary Work	30 days	30 days	Sat 16/1/16	Mon 15/2/16	Fri 16/9/16	Sun 16/10/16	100%	Fri 16/9/16	Sun 16/10/16	13035F						
1303	Submission of Design Temporary Work	0 days	351 days	Mon 15/2/16	Mon 15/2/16	Sun 16/10/16	Mon 2/10/17	100%	Sun 16/10/16	Mon 2/10/17	13145F-60 days						
1304	Hong Fai Road	240 days	240 days	Fri 18/8/17	Sat 14/4/18	Wed 8/2/17	Thu 5/10/17	100%	Wed 8/2/17	Thu 5/10/17							
1305	From Manhole 1903 to 0716	240 days	240 days	Fri 18/8/17	Sat 14/4/18	Wed 8/2/17	Thu 5/10/17	100%	Wed 8/2/17	Thu 5/10/17	1282FS-210 days						
1306	From Manhole 0703 to 0701	25 days	25 days	Wed 21/3/18	Sat 14/4/18	Mon 11/9/17	Thu 5/10/17	100%	Mon 11/9/17	Thu 5/10/17	1305FF						
1307	Connection to Siu Lam Tsuen Road From Manhole 0716 to 0718	35 days	35 days	Sun 11/3/18	Sat 14/4/18	Fri 1/9/17	Thu 5/10/17	100%	Fri 1/9/17	Thu 5/10/17	1305FF						
1308																	
1309	EOT Claim 020 - Delay for construction of CSD Married Staff Quarter (On going event)	0 days?	1112 days?	NA	NA	NA	NA	0%	Thu 15/12/16	Tue 31/12/19							
1310	Pending ER confirm works details	0 days?	382 days?	NA	NA	NA	NA	0%	Thu 15/12/16	Sun 31/12/17							
1311	Design and Endorsement of TTA drawings and TTA Implementation	0 days?	150 days	NA	NA	NA	NA	0%	Mon 1/1/18	Wed 30/5/18	1310						
1312	Additional construction time due to revised TTA implementation period	0 days?	300 days	NA	NA	NA	NA	0%	Thu 7/3/19	Tue 31/12/19	1319						
1313	Access Road Leading to CSD Married Staff Quarter	280 days	280 days	Fri 15/4/16	Thu 19/1/17	NA	NA	0%	Thu 31/5/18	Wed 6/3/19							
1314	From Manhole 1104 to Manhole 1110	45 days	45 days	Fri 15/4/16	Sun 29/5/16	NA	NA	0%	Sat 14/7/18	Sat 14/7/18	1301SS+180 days,1311						
1315	From Manhole 1201 to Manhole 1203	25 days	25 days	Mon 30/5/16	Thu 23/6/16	NA	NA	0%	Sun 15/7/18	Wed 8/8/18	1314						
1316	From Manhole 2001 to Manhole 1203	20 days	20 days	Fri 24/6/16	Wed 13/7/16	NA	NA	0%	Thu 9/8/18	Tue 28/8/18	1315						
1317	From Manhole 1203 to Manhole 1110	20 days	20 days	Thu 14/7/16	Tue 2/8/16	NA	NA	0%	Wed 29/8/18	Mon 17/9/18	1316						
1318	From Manhole 1110 to Manhole 1118	100 days	100 days	Wed 3/8/16	Thu 10/11/16	NA	NA	0%	Tue 18/9/18	Wed 26/12/18	1317						
1319	From Manhole 1118 to Manhole 1122	70 days	70 days	Fri 11/11/16	Thu 19/1/17	NA	NA	0%	Thu 27/12/18	Wed 6/3/19	1318						
1320	Siu Lam Road	20 days	20 days	Mon 26/3/18	Sat 14/4/18	NA	NA	0%	Tue 31/7/18	Sun 19/8/18							
1321	Connection From Manhole 0901 to 0721 after trenchless	20 days	20 days	Mon 26/3/18	Sat 14/4/18	NA	NA	0%	Tue 31/7/18	Sun 19/8/18	1023SS,1049,1245						
1322	CCTV inspection	0 days?	60 days	NA	NA	NA	NA	0%	Sat 2/11/19	Tue 31/12/19	1323FF						
1323	Completion of Section 9C	0 days	0 days	Sat 14/4/18	Sat 14/4/18	NA	NA	0%	Tue 31/12/19	Tue 31/12/19	1321,1305,1306,1307,12						
1324	Section 9C - Inclement Weather Granted (EOT Claim No. 3.18, up to 31 July 2017)	0 days?	53 days	NA	NA	NA	NA	0%	Wed 1/1/20	Sat 22/2/20	1323						
1325																	
1326	Duration of Section 11A - Lok Chui Street Sewage Pumping Station	929 days	929 days	Mon 20/7/15	Fri 2/2/18	Mon 20/7/15	NA	93%	Mon 20/7/15	Fri 2/2/18							
1327	Inclement Weather Granted (EOT Claim No. 3.18, up to 31 July 2017)	0 days?	58 days	NA	NA	NA	NA	0%	Sat 3/2/18	Sun 1/4/18	1326						
1328	Granted under EOT Ordrer 11 (Delayed Possession of Site)	0 days?	40 days	NA	NA	NA	NA	0%	Mon 2/4/18	Fri 11/5/18	1327						
1329	Additional Time for Completion	0 days?	347 days	NA	NA	NA	NA	0%	Mon 11/6/18	Thu 23/5/19	1328,1456FF						
1330																	
1331	EOT claim - Change of Design at LCS SPS (Double roof slab)	0 days?	326 days	NA	NA	Mon 7/8/17	NA	0%	Mon 7/8/17	Thu 28/6/18							
1332	Revised construction details from ER	0 days?	0 days	NA	NA	Mon 7/8/17	Mon 7/8/17	100%	Mon 7/8/17	Mon 7/8/17							
1333	Additional roof slab of transformer room	0 days?	45 days	NA	NA	NA	NA	0%	Tue 15/5/18	Thu 28/6/18	1332,1432						
1334																	
1335	EOT Claim - Additional Works in Transformer Room at Lok Chui Street SPS	0 days?	399 days	NA	NA	Thu 26/10/17	NA	22%	Thu 26/10/17	Wed 28/11/18							
1336	Revised construction details from ER	0 days?	0 days	NA	NA	Thu 26/10/17	Thu 26/10/17	100%	Thu 26/10/17	Thu 26/10/17							
1337	Additional construction time due to revised details (ie. Box out, pump sump, additional wall opening)	0 days?	90 days	NA	NA	NA	NA	0%	Sat 20/1/18	Thu 19/4/18	1336,1431						
1338	Laying additional DN100 DI drain pipe	0 days?	5 days	NA	NA	NA	NA	0%	Fri 20/4/18	Tue 24/4/18	1337						
1339	Additional plastic chain storage box	0 days?	366 days	NA	NA	NA	NA	0%	Thu 26/10/17	Fri 26/10/18							
1340	Procurement	0 days?	90 days	NA	NA	NA	NA	0%	Thu 26/10/17	Tue 23/1/18	1336						
1341	Fabrication and delivery	0 days?	90 days	NA	NA	NA	NA	0%	Wed 24/1/18	Mon 23/4/18	1340						
1342	Installation on site	0 days?	5 days	NA	NA	NA	NA	0%	Mon 22/10/18	Fri 26/10/18	1341,1445						
1343	Additional CLP single door	0 days?	380 days	NA	NA	Thu 26/10/17	NA	22%	Thu 26/10/17	Fri 9/11/18							
1344	Procurement	0 days?	90 days	NA	NA	Thu 26/10/17	NA	67%	Thu 26/10/17	Tue 23/1/18	1336						
1345	Prepare and submission of shop drawing	0 days?	60 days	NA	NA	NA	NA	0%	Wed 24/1/18	Sat 24/3/18	1344						

Project: Rolling Programme (Nov 2017)
Date: 28 Nov 2017
EOT Entitlement Programme based on Master Programme (Rev 0-A)

Task		Critical Split		Rolled Up Task		Rolled Up Baseline Milestone		Project Summary
Task Progress		Baseline		Rolled Up Critical Task		Rolled Up Progress		Group By Summary
Critical Task		Milestone		Rolled Up Milestone		Split		Inactive Task
Critical Task Progress		Baseline Milestone		Baseline Summary		Baseline Split		Inactive Milestone
Critical		Summary		Rolled Up Baseline		External Tasks		Deadline

Contract no. DC/2014/01
 Castle Peak Road Trunk Sewer and
 Tuen Mun Village Sewerage

ID	Task Name	Baseline Duration	Duration	Baseline Start	Baseline Finish	Actual Start	Actual Finish	% omplet	Start	Finish	Predecessors	Gantt Chart (2015-2020)															
1396												[Gantt Chart Area]															
1397	Mini-pile Foundation and Soldier Pile	297 days	369 days	Tue 1/12/15	Thu 22/9/16	Sun 31/1/16	Thu 2/2/17	100%	Sun 31/1/16	Thu 2/2/17		[Gantt Chart Area]															
1398	Mobilization of plant for predrilling works	7 days	7 days	Tue 1/12/15	Mon 7/12/15	Sun 31/1/16	Sat 6/2/16	100%	Sun 31/1/16	Sat 6/2/16	1394	[Gantt Chart Area]															
1399	Construct settlement and piezometer for monitoring	10 days	10 days	Tue 8/12/15	Thu 17/12/15	Sun 7/2/16	Tue 16/2/16	100%	Sun 7/2/16	Tue 16/2/16	1398	[Gantt Chart Area]															
1400	Predrilling works of mini-pile and soldier pile	23 days	23 days	Fri 18/12/15	Sat 9/1/16	Fri 29/4/16	Sat 21/5/16	100%	Fri 29/4/16	Sat 21/5/16	1389,1399	[Gantt Chart Area]															
1401	Submission of predrilling report	15 days	15 days	Sun 10/1/16	Sun 24/1/16	Sun 22/5/16	Sun 5/6/16	100%	Sun 22/5/16	Sun 5/6/16	1400	[Gantt Chart Area]															
1402	Mobilization of plant for 610mm soldier pile	14 days	14 days	Sun 10/1/16	Sat 23/1/16	Sun 22/5/16	Sat 4/6/16	100%	Sun 22/5/16	Sat 4/6/16	1395,1400	[Gantt Chart Area]															
1403	Construction of soldier pile (43 nos)	130 days	130 days	Sun 24/1/16	Wed 1/6/16	Sun 5/6/16	Wed 12/10/16	100%	Sun 5/6/16	Wed 12/10/16	1402	[Gantt Chart Area]															
1404	Mobilization of plant for mini-pile (64 nos)	14 days	14 days	Thu 19/5/16	Wed 1/6/16	Thu 29/9/16	Wed 12/10/16	100%	Thu 29/9/16	Wed 12/10/16	1403FS-14 days	[Gantt Chart Area]															
1405	Drilling of mini-piles	50 days	50 days	Thu 2/6/16	Thu 21/7/16	Thu 13/10/16	Thu 1/12/16	100%	Thu 13/10/16	Thu 1/12/16	1404	[Gantt Chart Area]															
1406	Installation of Rein-bar and Grouting	14 days	14 days	Fri 2/12/16	Thu 4/8/16	Thu 15/12/16	Fri 2/12/16	100%	Fri 2/12/16	Thu 15/12/16	1405	[Gantt Chart Area]															
1407	Mobilization for proof drilling	7 days	7 days	Fri 29/7/16	Thu 4/8/16	Fri 9/12/16	Thu 15/12/16	100%	Fri 9/12/16	Thu 15/12/16	1406FS-7 days	[Gantt Chart Area]															
1408	Proof Drilling	14 days	14 days	Fri 5/8/16	Thu 18/8/16	Fri 16/12/16	Thu 29/12/16	100%	Fri 16/12/16	Thu 29/12/16	1407	[Gantt Chart Area]															
1409	Submission of proof drilling report	14 days	14 days	Fri 19/8/16	Thu 1/9/16	Thu 30/12/16	Thu 12/1/17	100%	Fri 30/12/16	Thu 12/1/17	1408	[Gantt Chart Area]															
1410	Preparation of loading Test	21 days	21 days	Fri 5/8/16	Thu 25/8/16	Fri 16/12/16	Thu 5/1/17	100%	Fri 16/12/16	Thu 5/1/17	1407	[Gantt Chart Area]															
1411	Carry out loading test	14 days	14 days	Fri 26/8/16	Thu 8/9/16	Fri 6/1/17	Thu 19/1/17	100%	Fri 6/1/17	Thu 19/1/17	1410	[Gantt Chart Area]															
1412	Submission of loadign test report	14 days	14 days	Fri 9/9/16	Thu 22/9/16	Fri 20/1/17	Thu 2/2/17	100%	Fri 20/1/17	Thu 2/2/17	1411	[Gantt Chart Area]															
1413												[Gantt Chart Area]															
1414	Structural Work of Pumping Station	377 days	535 days	Fri 9/9/16	Wed 20/9/17	Fri 20/1/17	NA	80%	Fri 20/1/17	Sun 8/7/18		[Gantt Chart Area]															
1415	Temporary cofferdam for ELS for construction of pumping station	90 days	90 days	Fri 9/9/16	Wed 7/12/16	Fri 20/1/17	Wed 19/4/17	100%	Fri 20/1/17	Wed 19/4/17	1409,1411,1412FS-14 days	[Gantt Chart Area]															
1416	Excavation and shoring to formation level for wet well construction (refer drg. No. 5321A, formation level = -2.375mPD - 0.15m)	30 days	30 days	Thu 8/12/16	Fri 6/1/17	Thu 20/4/17	Fri 19/5/17	100%	Thu 20/4/17	Fri 19/5/17	1415	[Gantt Chart Area]															
1417	Welding of pile head (i.e.PC01 to PC 14)	9 days	9 days	Sat 7/1/17	Sun 15/1/17	Sat 20/5/17	Sun 28/5/17	100%	Sat 20/5/17	Sun 28/5/17	1416	[Gantt Chart Area]															
1418	Blinding layer	2 days	2 days	Mon 16/1/17	Tue 17/1/17	Mon 29/5/17	Tue 30/5/17	100%	Mon 29/5/17	Tue 30/5/17	1417	[Gantt Chart Area]															
1419	Construction of base slab of wet well	14 days	14 days	Wed 18/1/17	Tue 31/1/17	Wed 31/5/17	Tue 13/6/17	100%	Wed 31/5/17	Tue 13/6/17	1418	[Gantt Chart Area]															
1420	Construction of pump plinth	0 days?	2 days	NA	NA	Mon 12/6/17	Tue 13/6/17	100%	Mon 12/6/17	Tue 13/6/17	1419FF	[Gantt Chart Area]															
1421	Construction of Wall of wet well upto approx. -0.675mPD to 0.725mPD	14 days	14 days	Wed 1/2/17	Tue 14/2/17	Wed 14/6/17	Tue 27/6/17	100%	Wed 14/6/17	Tue 27/6/17	1419	[Gantt Chart Area]															
1422	Excavation and shoring to formation levels for Valve chamber, Coarse screen chamber and emergency storage tank	25 days	25 days	Wed 15/2/17	Sat 11/3/17	Wed 28/6/17	Sat 22/7/17	100%	Wed 28/6/17	Sat 22/7/17	1421	[Gantt Chart Area]															
1423	Welding of pile head (i.e.PB01 to PB15, PD01 to PD08 and PE01 to PE10 etc)	20 days	20 days	Sun 12/3/17	Fri 31/3/17	Sun 23/7/17	Fri 11/8/17	100%	Sun 23/7/17	Fri 11/8/17	1422	[Gantt Chart Area]															
1424	Blinding layer	2 days	2 days	Sat 1/4/17	Sun 2/4/17	Sat 12/8/17	Sun 13/8/17	100%	Sat 12/8/17	Sun 13/8/17	1423	[Gantt Chart Area]															
1425	Construction of base slabs of Valve chamber, Coarse screen chamber and emergency storage tank	25 days	25 days	Mon 3/4/17	Thu 27/4/17	Mon 14/8/17	Thu 7/9/17	100%	Mon 14/8/17	Thu 7/9/17	1424	[Gantt Chart Area]															
1426	Excavation to formation level of switch room and transformer rooms	20 days	20 days	Fri 28/4/17	Wed 17/5/17	Fri 8/9/17	Wed 27/9/17	100%	Fri 8/9/17	Wed 27/9/17	1425	[Gantt Chart Area]															
1427	Welding pile head (ie. PA01 to PA12)	10 days	10 days	Thu 18/5/17	Sat 27/5/17	Thu 28/9/17	Sat 7/10/17	100%	Thu 28/9/17	Sat 7/10/17	1426	[Gantt Chart Area]															
1428	Construction of walls below ground level	25 days	25 days	Sun 28/5/17	Wed 21/6/17	Thu 26/10/17	Sun 19/11/17	100%	Thu 26/10/17	Sun 19/11/17	1427,1336	[Gantt Chart Area]															
1429	Construction of ground floor slab	20 days	20 days	Thu 22/6/17	Tue 11/7/17	Mon 20/11/17	Sat 9/12/17	100%	Mon 20/11/17	Sat 9/12/17	1428	[Gantt Chart Area]															
1430	Backfilling to ground floor slab	25 days	25 days	Wed 12/7/17	Sat 5/8/17	Sun 10/12/17	NA	50%	Sun 10/12/17	Wed 3/1/18	1429	[Gantt Chart Area]															
1431	Construction of walls up to roof slab	25 days	25 days	Fri 28/7/17	Mon 21/8/17	NA	NA	0%	Tue 26/12/17	Fri 19/1/18	1430FS-9 days	[Gantt Chart Area]															
1432	Construction of roof slab	20 days	20 days	Tue 22/8/17	Sun 10/9/17	NA	NA	0%	Wed 25/4/18	Mon 14/5/18	1431,1338	[Gantt Chart Area]															
1433	Water Tightness test of inlet chamber, coarse screen chamber and valve chamber	15 days	15 days	Tue 22/8/17	Tue 5/9/17	NA	NA	0%	Wed 25/4/18	Wed 9/5/18	1431,1338	[Gantt Chart Area]															
1434	Roof kerb and staircase	10 days	10 days	Mon 11/9/17	Wed 20/9/17	NA	NA	0%	Fri 29/6/18	Sun 8/7/18	1432,1433,1333	[Gantt Chart Area]															
1435												[Gantt Chart Area]															
1436	Internal Finishes	135 days	261 days	Thu 21/9/17	Fri 2/2/18	NA	NA	0%	Mon 9/7/18	Tue 26/3/19		[Gantt Chart Area]															
1437	Installation of GRP cover	0 days?	14 days	NA	NA	NA	NA	0%	Fri 20/7/18	Thu 2/8/18	1438FF	[Gantt Chart Area]															
1438	Plastering & Painting	25 days	25 days	Thu 21/9/17	Sun 15/10/17	NA	NA	0%	Mon 9/7/18	Thu 2/8/18	1434	[Gantt Chart Area]															
1439	Glaze Tile (Toilet)	14 days	14 days	Mon 16/10/17	Sun 29/10/17	NA	NA	0%	Fri 3/8/18	Thu 16/8/18	1438	[Gantt Chart Area]															
1440	Installation of water closet and washing basin in toilet	0 days?	14 days	NA	NA	NA	NA	0%	Fri 3/8/18	Thu 16/8/18	1439FF	[Gantt Chart Area]															

Task		Critical Split		Rolled Up Task		Rolled Up Baseline Milestone		Project Summary
Task Progress		Baseline		Rolled Up Critical Task		Rolled Up Progress		Group By Summary
Critical Task		Milestone		Rolled Up Milestone		Split		Inactive Task
Critical Task Progress		Baseline Milestone		Baseline Summary		Baseline Split		Inactive Milestone
Critical		Summary		Rolled Up Baseline		External Tasks		Deadline

Project: Rolling Programme (Nov 2017)
 Date: 28 Nov 2017
 EOT Entitlement Programme based on Master Programme (Rev 0-A)

Contract no. DC/2014/01
 Castle Peak Road Trunk Sewer and
 Tuen Mun Village Sewerage

ID	Task Name	Baseline Duration	Duration	Baseline Start	Baseline Finish	Actual Start	Actual Finish	% Complete	Start	Finish	Predecessors	15	2016	2017	2018	2019	2020							
												Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
1488	CLP energization	0 days	0 days	Fri 2/2/18	Fri 2/2/18	NA	NA	0%	Tue 26/3/19	Tue 26/3/19	1450,1487													
1489																								
1490	Remaining works and Handing Over to E&M for Testing and Commissioning	120 days	120 days	Thu 4/1/18	Thu 3/5/18	NA	NA	0%	Wed 5/9/18	Wed 2/1/19														
1491	Recycle Timber plastic cladding of External Finishign of Pumping Station	60 days	60 days	Thu 4/1/18	Sun 4/3/18	NA	NA	0%	Wed 5/9/18	Sat 3/11/18	1452FS-30 days													
1492	Metal fence wall & Gate	60 days	60 days	Thu 4/1/18	Sun 4/3/18	NA	NA	0%	Wed 5/9/18	Sat 3/11/18	1453FS-30 days													
1493	Tempred glass fence on roof	30 days	30 days	Sat 3/2/18	Sun 4/3/18	NA	NA	0%	Fri 5/10/18	Sat 3/11/18	1491FS-30 days,1492FS-30 days													
1494	Green Roof	45 days	45 days	Mon 5/3/18	Wed 18/4/18	NA	NA	0%	Sun 4/11/18	Tue 18/12/18	1493													
1495	U-channel	50 days	50 days	Tue 13/2/18	Tue 3/4/18	NA	NA	0%	Mon 15/10/18	Mon 3/12/18	1492FS-20 days													
1496	Road pavement around Pumping Station	50 days	50 days	Mon 5/3/18	Mon 23/4/18	NA	NA	0%	Sun 4/11/18	Sun 23/12/18	1495FS-30 days													
1497	Landscaping work	60 days	60 days	Mon 5/3/18	Thu 3/5/18	NA	NA	0%	Sun 4/11/18	Wed 2/1/19	1496FS-50 days													
1498	Handing Over to E&M (1019 days after commencement of Pumping Station)	0 days	0 days	Thu 3/5/18	Thu 3/5/18	NA	NA	0%	Wed 2/1/19	Wed 2/1/19	1494FF,1497													
1499	E&M Work	260 days	260 days	Sat 3/2/18	Sat 20/10/18	NA	NA	0%	Wed 27/3/19	Wed 11/12/19														
1500	Installation of E&M work	120 days	120 days	Sat 3/2/18	Sat 2/6/18	NA	NA	0%	Wed 27/3/19	Wed 24/7/19	1488													
1501	Installation of E&M works & Testing and Commissioning	140 days	140 days	Sun 3/6/18	Sat 20/10/18	NA	NA	0%	Thu 25/7/19	Wed 11/12/19	1500													
1502																								
1503	Completion Section 11B	0 days	0 days	Sat 20/10/18	Sat 20/10/18	NA	NA	0%	Wed 11/12/19	Wed 11/12/19	1498FF+172 days,1501													
1504	Section 11B - Inclement Weather Granted (EOT Claim No. 3.18, up to 31 July 2017)	0 days?	59 days	NA	NA	NA	NA	0%	Thu 12/12/19	Sat 8/2/20	1503													
1505																								
1506																								
1507	Duration of Section 10A - Siu Lam Psychiatric Centre Sewage Pumping Station	750 days	750 days	Mon 20/7/15	Mon 7/8/17	Mon 20/7/15	Mon 7/8/17	100%	Mon 20/7/15	Mon 7/8/17														
1508	Inclement Weather Granted (EOT Claim No. 3.18, up to 31 July 2017)	0 days?	45 days	NA	NA	Tue 8/8/17	Thu 21/9/17	100%	Tue 8/8/17	Thu 21/9/17	1507													
1509	Additional Time for Completion	0 days?	50 days	NA	NA	Fri 22/9/17	Fri 10/11/17	100%	Fri 22/9/17	Fri 10/11/17	1508													
1510	Completion	0 days?	0 days	NA	NA	Fri 10/11/17	Fri 10/11/17	100%	Fri 10/11/17	Fri 10/11/17	1509,1565FF													
1511																								
1512	Section 10A - Siu Lam Psychiatric Centre Sewage Pumping Station	750 days	800 days?	Mon 20/7/15	Mon 7/8/17	Mon 20/7/15	NA	98%	Mon 20/7/15	Tue 26/9/17														
1513	Portion 10 - Time Possession of Site	60 days	60 days	Mon 20/7/15	Thu 17/9/15	Mon 20/7/15	Thu 17/9/15	100%	Mon 20/7/15	Thu 17/9/15														
1514	Prepartation Work	90 days	90 days	Fri 18/9/15	Wed 16/12/15	Fri 18/9/15	Wed 16/12/15	100%	Fri 18/9/15	Wed 16/12/15														
1515	Initial Survey	60 days	60 days	Fri 18/9/15	Mon 16/11/15	Fri 18/9/15	Mon 16/11/15	100%	Fri 18/9/15	Mon 16/11/15	1513													
1516	Site clearance	30 days	30 days	Tue 17/11/15	Wed 16/12/15	Tue 17/11/15	Wed 16/12/15	100%	Tue 17/11/15	Wed 16/12/15	1515													
1517																								
1518	EOT Claim 021 - Delay due to Change of Design at SLPC SPS	0 days?	80 days	NA	NA	Sat 10/9/16	Tue 29/11/16	100%	Sat 10/9/16	Tue 29/11/16														
1519	Works were suspended due to design change	0 days?	0 days	NA	NA	Sat 10/9/16	Sat 10/9/16	100%	Sat 10/9/16	Sat 10/9/16														
1520	Partially updated design information was reviewed by AECOM and provided	0 days?	80 days	NA	NA	Sat 10/9/16	Mon 28/11/16	100%	Sat 10/9/16	Mon 28/11/16	1519													
1521	Works resumed	0 days?	0 days	NA	NA	Tue 29/11/16	Tue 29/11/16	100%	Tue 29/11/16	Tue 29/11/16	1520													
1522																								
1523	EOT Claim 033 - Change of Design in Siu Lam Psychiatric Centre SPS	0 days?	167 days?	NA	NA	Tue 29/11/16	Sun 14/5/17	100%	Tue 29/11/16	Sun 14/5/17														
1524	Additional cast-in socket for davit is requested to install under updated construction details	0 days?	0 days	NA	NA	Tue 29/11/16	Tue 29/11/16	100%	Tue 29/11/16	Tue 29/11/16	1521													
1525	Order, Fabrication and Delivery of socket	0 days?	42 days?	NA	NA	Tue 29/11/16	Mon 9/1/17	100%	Tue 29/11/16	Mon 9/1/17	1524													
1526	Ready for installation	0 days?	0 days	NA	NA	Tue 10/1/17	Tue 10/1/17	100%	Tue 10/1/17	Tue 10/1/17	1525													
1527	Installation of cast-in davit and modification of installed RC bars	0 days?	3 days	NA	NA	Tue 10/1/17	Thu 12/1/17	100%	Tue 10/1/17	Thu 12/1/17	1526													
1528	Construct Rising main (CH 307 to CH 282) from Pump House in advance Koisk due to increase of depth of pumping station	0 days?	55 days	NA	NA	Wed 22/2/17	Mon 17/4/17	100%	Wed 22/2/17	Mon 17/4/17	1539													
1529	Confirm details of additional 45 degree bend by AECOM	0 days?	0 days	NA	NA	Wed 1/3/17	Wed 1/3/17	100%	Wed 1/3/17	Wed 1/3/17														

Project: Rolling Programme (Nov 2017)
 Date: 28 Nov 2017
 EOT Entitlement Programme based on Master Programme (Rev 0-A)

Task		Critical Split		Rolled Up Task		Rolled Up Baseline Milestone		Project Summary	
Task Progress		Baseline		Rolled Up Critical Task		Rolled Up Progress		Group By Summary	
Critical Task		Milestone		Rolled Up Milestone		Split		Inactive Task	
Critical Task Progress		Baseline Milestone		Baseline Summary		Baseline Split		Inactive Milestone	
Critical		Summary		Rolled Up Baseline		External Tasks		Deadline	

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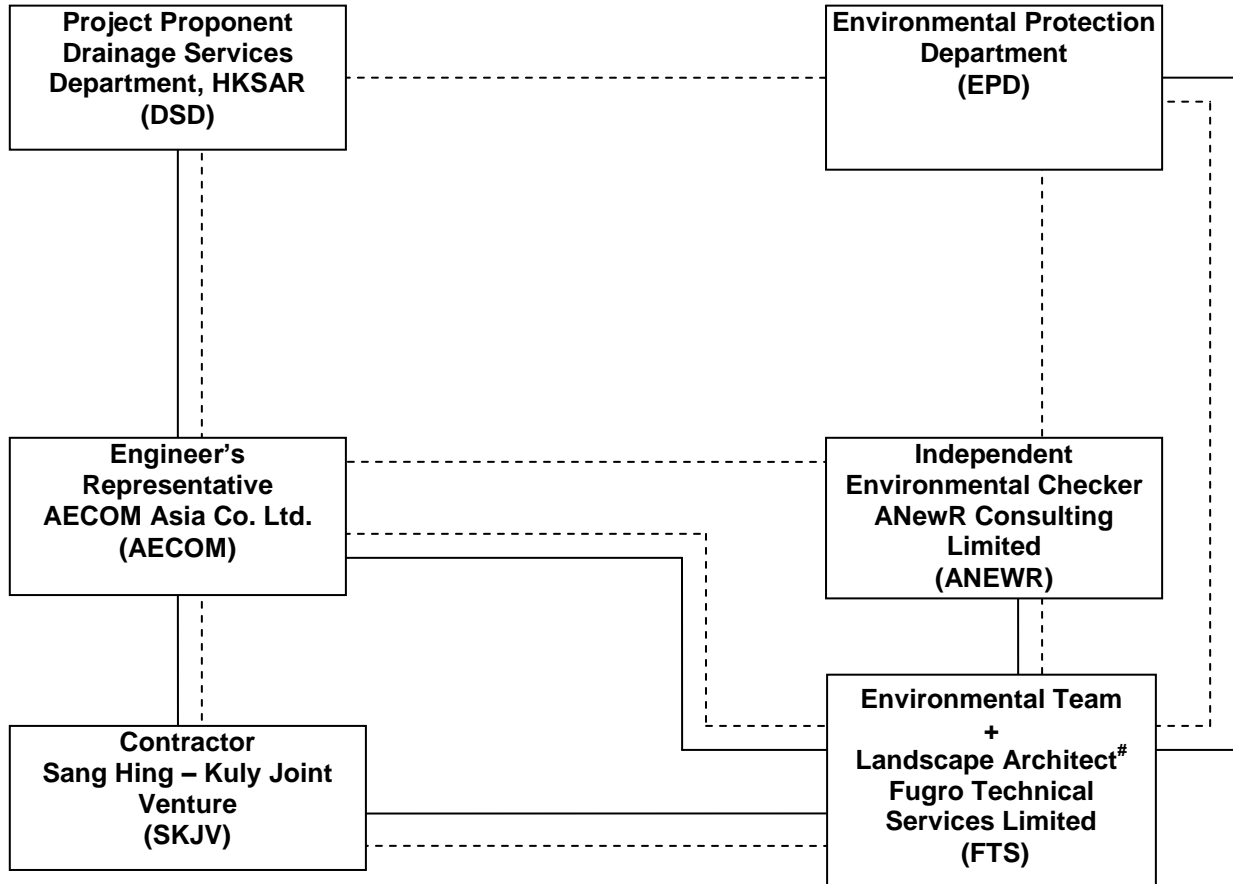
Appendix B

Project Organization Chart

FUGRO TECHNICAL SERVICES LIMITED

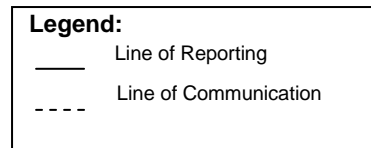
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Remark:

The Landscape Architect with a minimum of 1-2years on site experience as a member of the ET to monitor and audit the landscaping installation works and landscape protection measures.



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Appendix C

Action and Limit Levels for Air Quality and Noise

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Action and Limit Levels for Air Quality

Parameter	Monitoring Station	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
1-hr TSP ($\mu\text{g}/\text{m}^3$)	LC6a	344	500
	LC9	335	

Action and Limit Levels for Construction Noise

Time Period	Location	Action	Limit
0700-1900 hrs on normal weekdays	LC6a LC9	When one documented complaint is received	75* dB(A)

* reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

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Appendix D

Air Quality Monitoring Data and Graphical Presentations

FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre,
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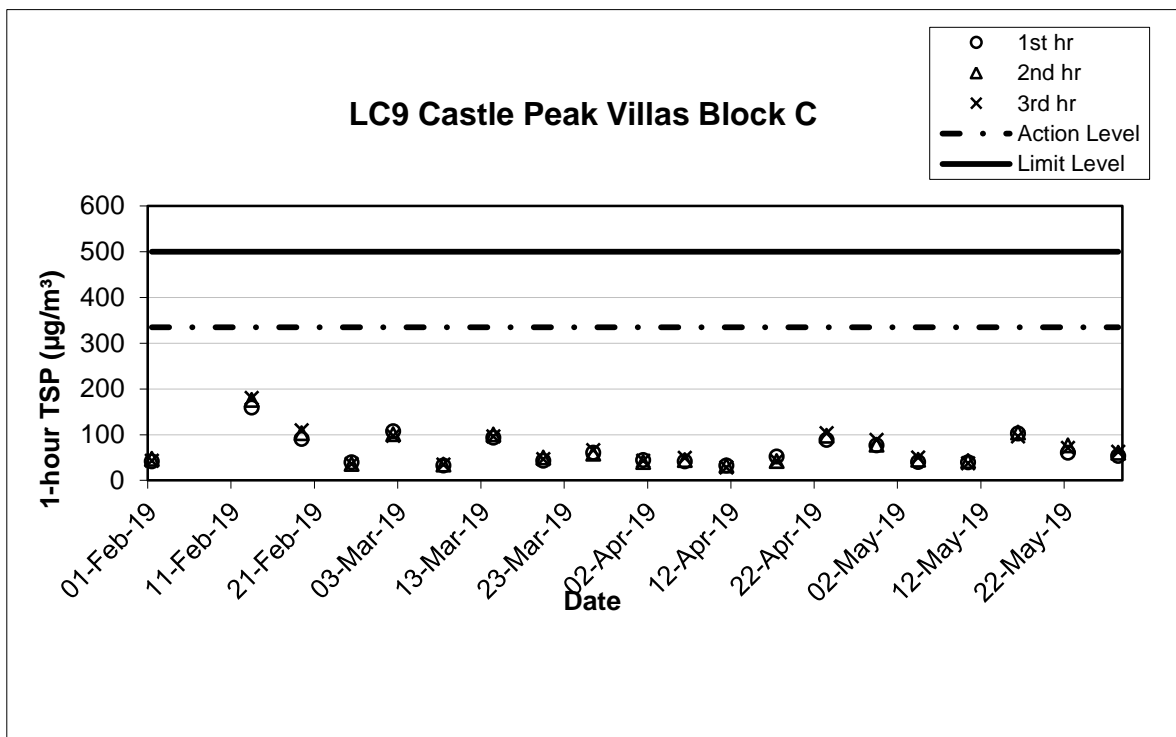
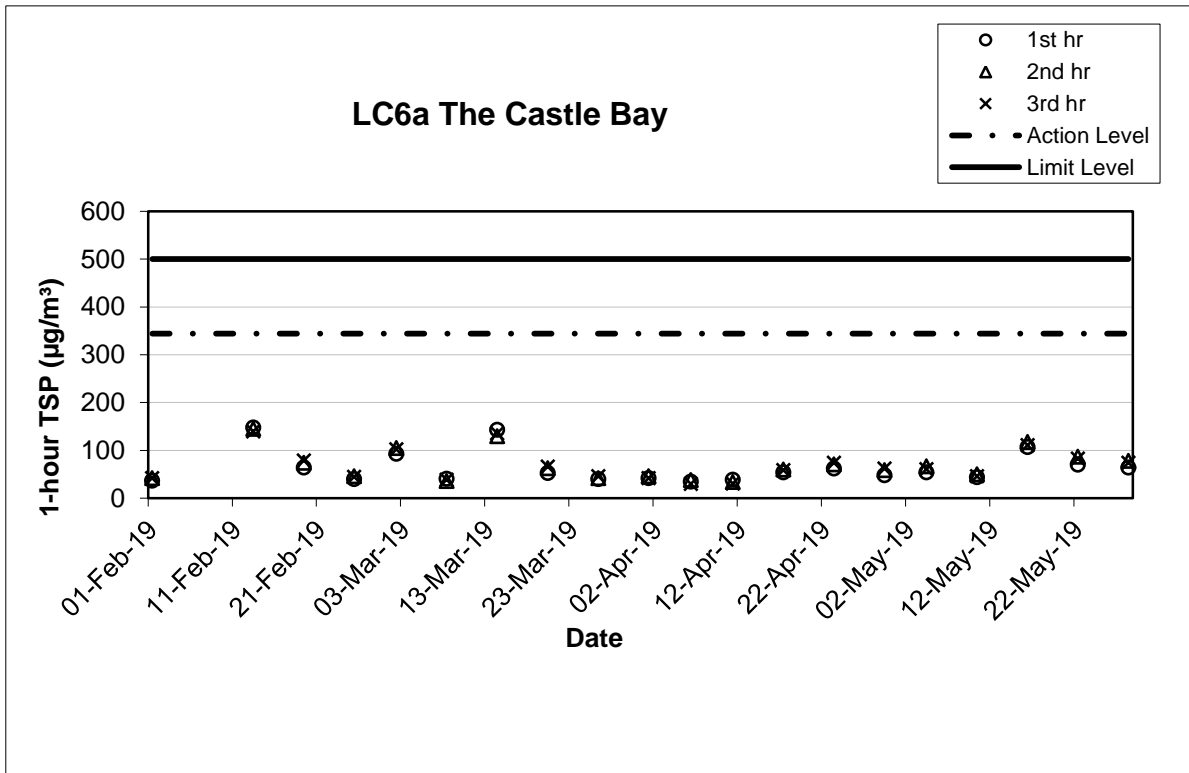
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**LC6a The Castle Bay**

1-hour TSP ($\mu\text{g}/\text{m}^3$)					
Date	Start Time	1st hr	2nd hr	3rd hr	Weather
01-Feb-19	08:34	37	42	42	Fine
13-Feb-19	14:57	148	145	140	Fine
19-Feb-19	08:51	64	74	79	Cloudy
25-Feb-19	13:30	40	46	45	Cloudy
02-Mar-19	08:58	93	105	102	Fine
08-Mar-19	13:00	41	36	39	Cloudy
14-Mar-19	13:09	143	130	136	Fine
20-Mar-19	13:30	53	63	66	Cloudy
26-Mar-19	14:32	40	42	46	Fine
01-Apr-19	14:32	42	46	42	Fine
06-Apr-19	08:32	35	38	30	Fine
11-Apr-19	14:00	39	34	31	Cloudy
17-Apr-19	13:48	54	60	59	Fine
23-Apr-19	13:32	62	71	74	Fine
29-Apr-19	08:43	48	59	62	Fine
04-May-19	08:33	54	67	61	Fine
10-May-19	08:50	44	50	46	Fine
16-May-19	13:30	107	118	111	Fine
22-May-19	08:39	70	87	83	Fine
28-May-19	13:39	64	78	74	Cloudy

LC9 Castle Peak Villas Block C

1-hour TSP ($\mu\text{g}/\text{m}^3$)					
Date	Start Time	1st hr	2nd hr	3rd hr	Weather
01-Feb-19	08:49	41	47	43	Fine
13-Feb-19	15:47	159	176	180	Fine
19-Feb-19	08:35	90	103	109	Cloudy
25-Feb-19	13:40	39	36	36	Cloudy
02-Mar-19	08:39	107	101	97	Fine
08-Mar-19	13:15	32	34	34	Cloudy
14-Mar-19	13:26	93	100	96	Fine
20-Mar-19	13:50	43	50	46	Cloudy
26-Mar-19	14:25	60	58	66	Fine
01-Apr-19	14:27	44	40	43	Fine
06-Apr-19	08:42	41	44	49	Fine
11-Apr-19	14:19	32	32	28	Cloudy
17-Apr-19	14:00	52	42	43	Fine
23-Apr-19	13:52	88	97	103	Fine
29-Apr-19	08:59	76	78	88	Fine
04-May-19	08:50	40	45	50	Fine
10-May-19	09:00	39	42	37	Fine
16-May-19	13:40	102	104	96	Fine
22-May-19	08:58	60	76	71	Fine
28-May-19	13:47	53	60	62	Cloudy



Note:

- 1) The major activities during the reporting period refer to section 1.4.1.
- 2) The weather conditions during the period refer to section 2.5.1.
- 3) The other factors influencing the monitoring results refer to section 2.6.

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Appendix E

Noise Monitoring Data and Graphical Presentations

FUGRO TECHNICAL SERVICES LIMITED

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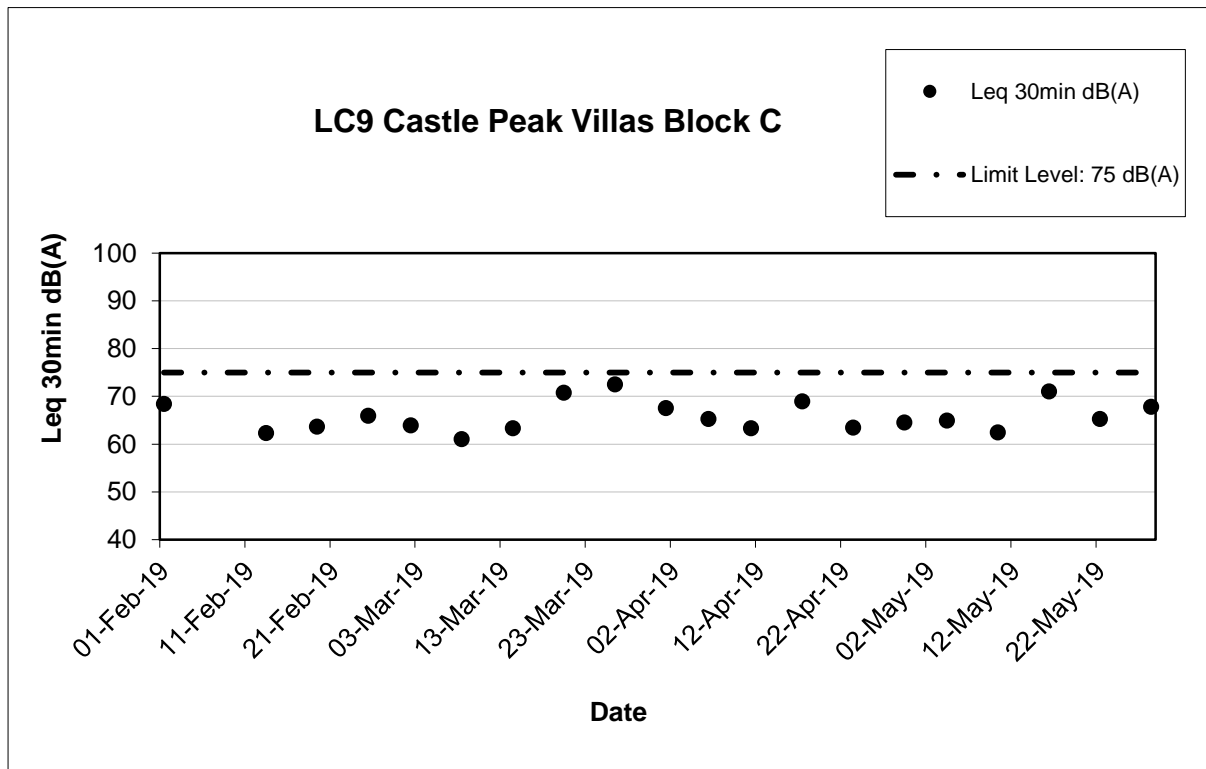
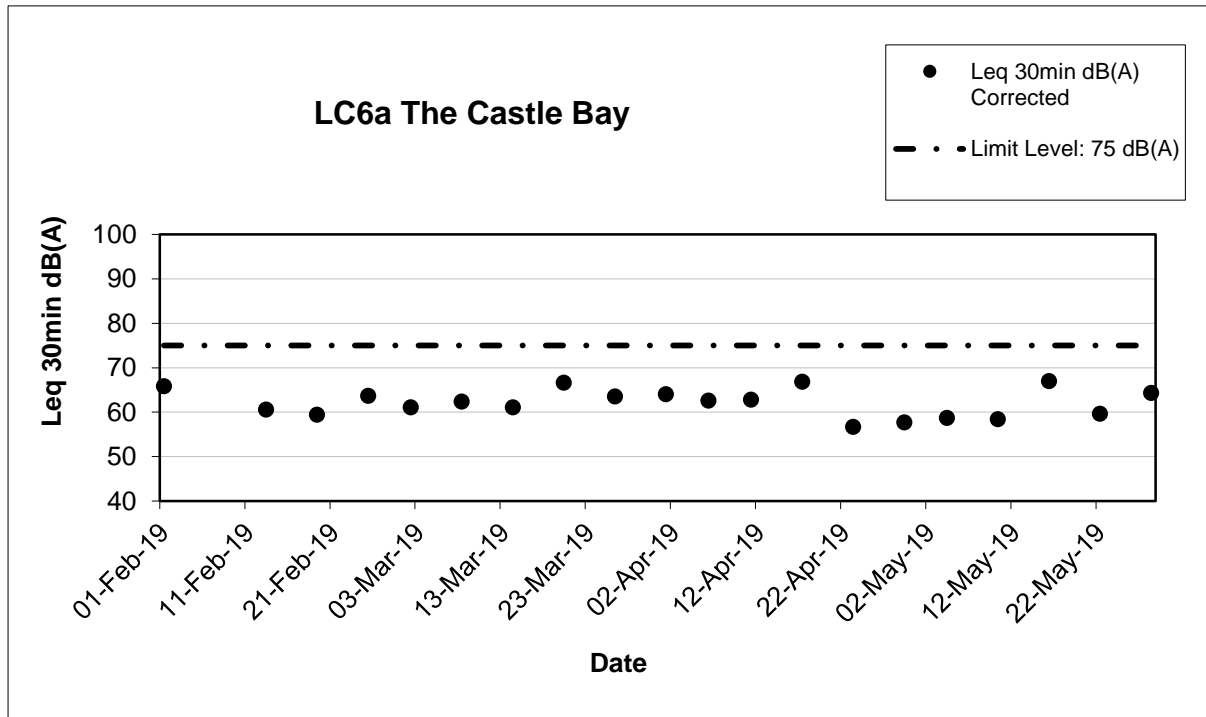
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**LC6a The Castle Bay**

Date	Start Time	L _{eq} 30min dB(A)	Corrected Leq 30min dB(A)	L ₉₀ dB(A)	L ₁₀ dB(A)	Weather
01-Feb-19	09:56	71	66	64	73	Fine
13-Feb-19	14:45	66	61	57	67	Fine
19-Feb-19	09:02	64	59	57	67	Cloudy
25-Feb-19	14:30	69	64	65	71	Cloudy
02-Mar-19	09:05	66	61	58	68	Fine
08-Mar-19	13:00	67	62	58	70	Cloudy
14-Mar-19	14:25	66	61	58	68	Fine
20-Mar-19	14:38	72	67	63	74	Cloudy
26-Mar-19	15:12	69	64	64	73	Fine
01-Apr-19	14:32	69	64	65	71	Fine
06-Apr-19	09:33	68	63	62	72	Fine
11-Apr-19	15:08	68	63	60	69	Cloudy
17-Apr-19	14:49	72	67	66	73	Fine
23-Apr-19	14:54	62	57	59	63	Fine
29-Apr-19	09:58	63	58	59	64	Fine
04-May-19	09:48	64	59	59	66	Fine
10-May-19	11:25	63	58	53	65	Fine
16-May-19	14:45	72	67	70	75	Fine
22-May-19	09:57	65	60	60	67	Fine
28-May-19	15:37	69	64	66	73	Cloudy

LC9 Castle Peak Villas Block C

Date	Start Time	L _{eq} 30min dB(A)	Corrected Leq 30min dB(A)	L ₉₀ dB(A)	L ₁₀ dB(A)	Weather
01-Feb-19	09:00	68	N.A	64	71	Fine
13-Feb-19	13:58	62	N.A	56	64	Fine
19-Feb-19	09:49	64	N.A	57	65	Cloudy
25-Feb-19	13:37	66	N.A	62	69	Cloudy
02-Mar-19	09:54	64	N.A	57	66	Fine
08-Mar-19	13:45	61	N.A	55	63	Cloudy
14-Mar-19	13:36	63	N.A	57	65	Fine
20-Mar-19	13:59	71	N.A	60	73	Cloudy
26-Mar-19	14:25	73	N.A	67	75	Fine
01-Apr-19	15:21	68	N.A	66	71	Fine
06-Apr-19	08:45	65	N.A	59	69	Fine
11-Apr-19	14:25	63	N.A	60	68	Cloudy
17-Apr-19	14:03	69	N.A	60	71	Fine
23-Apr-19	14:06	63	N.A	58	65	Fine
29-Apr-19	09:13	65	N.A	58	66	Fine
04-May-19	09:02	65	N.A	59	66	Fine
10-May-19	10:48	62	N.A	61	64	Fine
16-May-19	14:00	71	N.A	69	73	Fine
22-May-19	09:09	65	N.A	59	67	Fine
28-May-19	14:00	68	N.A	59	69	Cloudy



Note:

- 1) The major activities during the reporting period refer to section 1.4.1.
- 2) The weather conditions during the period refer to section 2.5.1.
- 3) The other factors influencing the monitoring results refer to section 2.6.

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Appendix F

Cumulative Statistics on Exceedances, Complaints, Notifications of Summons and Successful Prosecutions

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Environmental Complaints Log

Complaint Log No.	Date of Receipt	Received From and Received By	Nature of Complaint	Date Investigated	Outcome	Date of Reply
Nil	-	-	-	-	-	-

Cumulative Statistics on Complaints

Environmental Parameters	Cumulative No. Brought Forward	No. of Complaints This Month	Cumulative Project-to-Date
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	0

Cumulative Statistics on Notifications of Summons and Successful Prosecutions

Environmental Parameters	Cumulative No. Brought Forward	No. of Prosecutions This Month	Cumulative Project-to-Date
Air	0	0	0
Noise	0	0	0
Water	0	0	0
Waste	0	0	0
Total	0	0	0

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Appendix G

Implementation Status of Environmental Mitigation Measures

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Air Quality

EIA Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Status in Construction Phase
4.5	Undertake all air pollution measures to prevent dust nuisance as a result of and during construction activities.	All unpaved haul roads, bulldozed material, exposed site areas / Throughout construction period	Contractor	TMEIA	^
4.5	No debris or other materials shall be burnt on the works areas.	All areas / Throughout construction period	Contractor	TMEIA. Avoid smoke impacts and disturbance	^
4.5	Dust suppression measures shall be provided and to be submitted to and approved by the Engineer.	All areas / Throughout construction period	Contractor	TMEIA	^
4.5	Stockpiles of imported material kept on site shall be contained within hoardings, dampened and/or covered during dry and windy weather.	All areas / Throughout construction period	Contractor	TMEIA Avoid dust generation	^
4.5	Material stockpiled along side trenches should be covered with tarpaulins whenever works are within village boundaries.	All areas / Throughout construction period	Contractor	TMEIA Avoid dust generation / visual impacts	^
4.5	Water sprays shall be used during the delivery and handling of cement, sands aggregates and the like.	All areas / Throughout construction period	Contractor	TMEIA Avoid dust generation	^
4.5	No batching of concrete should be carried out on site. Concrete should be used in ready mixed form and off loaded adjacent to designated works areas.	All areas / Throughout construction period	Contractor	TMEIA	^

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EIA Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Status in Construction Phase
4.5	Any vehicle used for moving cement, sands, aggregates and construction waste and the like shall have properly fitting side and tail boards. Materials shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin. The tarpaulin shall be properly secured and shall extend at least 300mm over the edges of the side and tail boards.	All areas / Throughout construction period	Contractor	TMEIA Avoid dust and spillage of material	^
4.5	No earth, mud, debris, dust and the like shall be deposited on public roads. Details of proposals for the wheel cleaning facilities shall be agreed with the Engineer. Such wheel washing facility shall be usable prior to any earthworks excavation activity on the Site.	All areas, particularly pumping station sites / Throughout construction period	Contractor	TMEIA Avoid spread/ deposition of mud	^
4.6.9	Pumping station vent shafts should be located away from sensitive receivers.	All pumping stations	DSD	TMEIA Avoid odour impacts	N/A
4.6.18	Use a covered container to store and transport the screenings from the pump house.	All pumping stations /operational phase	DSD	TMEIA Avoid odour impacts	N/A
4.6.18	Undertake the collection of the screenings and transfer to the covered container within the confines of the pump house.	All pumping stations / operational phase	DSD	TMEIA Avoid odour impacts	N/A
11.2.8	EM&A in the form of 1 hour total suspended particulates monitoring once per week	All sensitive representative receivers / Throughout construction period	Contractor	EM&A Manual	^

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Noise

EIA Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Status in Construction Phase
5.7.1 & 5.8.1	Ensure silencers are installed on the exhaust pipes of the trucks, excavators, compactors, concrete lorry mixer, and cranes for all activities.	All areas / Throughout construction period	Contractor	TMEIA	^
5.7.1 & 5.8.1	Use of mufflers on the breakers for all activities.	All areas / Throughout construction period	Contractor	TMEIA	N/A
5.7.1 & 5.8.1	Use of temporary noise barriers for all activities at the pumping station sites and during main sewer construction. During main sewer construction, barriers should be used to screen the activities of mobile equipment including the crane and excavator.	All pumping stations and main sewer construction locations / Throughout construction period	Contractor	TMEIA	N/A
5.5.10	Use of temporary noise barriers for all activities in the villages, where there is at least a 5m clearance	Village sewer alignment / Throughout construction period	Contractor	TMEIA	^
5.8.6 & 5.9.6	Manual breaking of concrete, where the concrete is less than 50mm thick.	Sewer alignment construction / concrete breaking activities	Contractor	TMEIA	N/A
5.8.6 & 5.9.6	Use of alternative pavement removal methods/equipment (kick ripper), where the concrete is less than 100mm thick	Sewer alignment construction / concrete breaking activities	Contractor	TMEIA	N/A

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EIA Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Status in Construction Phase
5.8.6 & 5.9.6	Use of acoustic enclosure in place of a barrier where there is a 6m clearance.	Sewer alignment construction / Throughout construction period	Contractor	TMEIA	N/A
5.8.6 & 5.9.6	Scheduling the numbers and operating times of equipment, when noise levels cannot be reduced to within the standards by other means	Sewer alignment construction / Throughout construction period	Contractor	TMEIA	^
5.8.11	The construction activities should be carried out in the daytime period (08.00- 18.00) only and shall exclude Sundays and public holidays.	All areas	Contractor	TMEIA	^
5.8.11	Powered mechanical equipment shall not be used within 5m of an NSR without the permission of the Engineer	All areas / Throughout construction period	Contractor	TMEIA	^
5.8.11	Carry out good site practice to limit noise emission at source.	All areas / Throughout construction period	Contractor	TMEIA	^
5.8.11	Avoid simultaneous noisy activities.	All areas / Throughout construction period	Contractor	TMEIA	^
11.2.8	EM&A in the form of noise monitoring.	All representative receivers / Throughout construction period	Contractor	EM&A Manual	^

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Water Quality

EIA Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Status in Construction Phase
6.4.3	Stockpiles of excavated material should be kept to a minimum and covered during times of heavy rainfall.	All areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	^
6.4.10	Pass any trench dewatering through a portable sand/silt removal traps prior to discharge.	All areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	^
6.5.2	When works are carried out during the rainy season exposed slopes, stockpiles should be covered with tarpaulin and temporary access roads protected with a layer of gravel or crushed stone.	All areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	N/A
6.5.2	Surface run off should be discharged to storm drains via sand/silt removal traps.	All areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	^
6.5.2	Channels, bunds or sand bags should be used to direct any storm water to the traps and perimeter channels should be constructed before the main works begin to prevent external run off from crossing the site.	All areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	^
6.5.2	Silt removal structures, channels and manholes should be maintained to remove accumulated material, specifically at the onset and end of rainy periods.	All areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	^

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EIA Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Status in Construction Phase
6.5.2	Trenches for the sewer main should be dug and backfilled in short sections to minimise the quantities of rain water which will need to be pumped from them and upslope bunding provided to prevent surface water from flowing into the trenches.	All areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	N/A
6.5.2	Rainwater pumped from the trenches should be discharged to storm drains via sand/silt removal traps.	All areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	N/A
6.5.2	Discharges to natural water courses should only take place when the effluent can be shown to comply with the relevant specified standards.	All areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94 & Technical Memorandum on Standards for Effluent Discharged in Drainage and Sewerage Systems, Inland and Coastal Waters	^
6.5.3	All plant should be in proper working order and maintained such that there is no leakage of fuel or oil. Any waste oils should be collected in designated tanks prior to disposal off site.	All areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	^
6.5.3	All mechanical plant maintenance and refuelling areas shall be sited on paved areas. All storm water run-off from these areas should be discharged via oil separators/petrol separators and sand/silt removal traps.	All areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	^

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EIA Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Status in Construction Phase
6.5.4	Groundwater pumped out of excavations for the construction of pump sumps should only be discharged following removal of silt by sand/silt removal traps.	All areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	^
6.5.5	Water from drilling of rock should be discharged following removal of silt by sand/silt removal traps.	All areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	^
6.5.6	The wheels of all vehicles leaving the construction site should be washed before leaving the site to minimise the carry over of mud onto public roads. Wheel wash water should be recycled and only discharged following removal of silt by sand/silt removal traps.	All areas particularly pumping station sites / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	^
6.5.7	Run off from the roofs of site buildings should be conveyed in closed drains to the nearest surface water course to prevent the generation of excessive quantities of surface water run off carrying suspended solids.	Site Office areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	^
6.5.7	All spillages should be cleaned up immediately to prevent their downward migration into the groundwater.	All areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	^
6.5.7	Sewage from toilets and any kitchens in the site facilities should be treated via a septic tank system or if this is not practicable chemical toilets should be provided and the waste from these together with 'grey water' removed from the site on a daily basis for disposal at an appropriate receiving point.	All areas / throughout construction period	Contractor	WPCO, TMEIA & ProPECC PN 1/94	^

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EIA Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Status in Construction Phase
6.6.2	Overflow bypasses to be used in emergency situations only and no effluent should be discharged during regular maintenance.	All pumping stations / Operation	DSD	WPCO, TMEIA	N/A
6.6.3 & 6.6.4	Supply pumping stations with stand-by pumps, emergency power supplies and telemetry system.	All Pumping Stations	DSD	WPCO, TMEIA & ProPECC PN 1/94	N/A
11.2.8	EM&A in the form of site supervision to ensure water quality protection measures are implemented.	All areas/ Throughout construction period	Contractor	EM&A	^

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Waste Management

EIA Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Status in Construction Phase
7.12.1	The Contractor shall identify a coordinator for the management of waste. The coordinator shall prepare a Waste Management Plan which specifies procedures such as a ticketing system, to facilitate tracking of loads and to ensure that illegal disposal of wastes does not occur, and protocols for the maintenance of records of the quantities of wastes generated, recycled and disposed. The Waste Management Plan shall be prepared with reference to Works Branch Technical Circular (WBTC) No. 5/99 for the Trip-ticket System for Disposal of Construction and Demolition Material and issued to the DEP and CED to confirm the availability for C&D and public fill waste.	Plan to be prepared prior to the start of construction, Implementation throughout construction period / All areas	Contractor	TMEIA.Works Branch Technical Circular (WBTC) No. 5/99 for the Trip-ticket System for Disposal of Construction and Demolition Material	^
7.12.1	Stockpiled material should avoid vegetated areas where possible and covered by tarpaulins. Storage of material on site should be kept to a minimum.	All areas/ Throughout construction period	Contractor	TMEIA. Prevent windblown dust and/or surface run-off / avoid nuisance to local residents	^
7.12.1	Surplus material should be sorted on site into C&D waste and that suitable for public fill	All areas /throughout construction period	Contractor	TMEIA. Maximise reusable material	^
7.12.1	The contractor should provide a temporary storage area for general refuse during the construction phase which should be enclosed to avoid refuse being windblown and affected by rain. General refuse should be stored on site for a minimum period and disposed of at a licenced facility.	All areas / throughout construction period	Contractor	TMEIA	^

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EIA Reference	Environmental Protection Measures	Location/ Timing	Implementation Agent	Relevant Standard or Requirement	Implementation Status in Construction Phase
7.12.1	Excavated material in trucks shall be covered by tarpaulins to reduce the potential for spillage.	All areas / throughout construction period	Contractor	TMEIA	^
7.12.1	Suitable chemical waste storage areas shall be formed on the site for temporary storage pending collection. All chemical wastes shall be handled, stored, transported and disposed of in accordance with the relevant practices.	All areas / throughout construction period	Contractor	TMEIA/ Code of Practice on the Package, Labelling and Storage of Chemical Wastes and A Guide to the Chemical Waste Control Scheme	^
7.12.1	Nightsoil arising from chemical toilets and on site chemical treatment facilities shall be transported by a licensed contractor to government Sewage Treatment Works for disposal.	All areas / throughout construction period	Contractor	TMEIA/ Sanitation and Conservancy (Regional Council) By-laws	^
7.12.1	Any screenings and grit that are removed during maintenance shall be disposed of at a landfill site. The material shall be suitably contained and covered.	All areas / operational phase	DSD	TMEIA	N/A
11.2.8	EM&A in the form of supervision of waste management practices	All areas / throughout construction period	Contractor	EM&A	^

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Landscape and Visual

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10.8.5, 10.9.15, 10.10.6, 10.10.11, 10.10.20, 10.11.6	Use of a suitable colour scheme to the pump station building to match the design of the adjacent properties.	All pumping stations	DSD & Contractor	Reduce visual intrusion of pumping stations	N/A
10.8.5, 10.9.15, 10.10.11, 10.10.20, 10.11.6	Construction of boundary wall similar to the adjacent housing instead of standard chain link and barbed wire fence.	All pumping stations except Tai Lam Correctional Institution	DSD & Contractor	Screen pumping stations	N/A
10.8.5, 10.9.15, 10.10.11, 10.10.20, 10.11.6	Planting of trees and shrubs to the boundary of the pumping station compound.	All pumping stations except Tai Lam Correctional Institution	DSD & Contractor	Screen pumping stations	N/A
10.8.6	Minimise damage to the rootball of the tree east of the pumping station site.	East of Castle Peak Villas pumping station/ During excavation	DSD and Contractor		^
11.2.8	EM&A in the form of site supervision of protection measures for trees and landscaping and compensatory planting establishment during the construction and operational phases respectively	All areas	Contractor	EM&A	^

Remarks: ^

Compliance of mitigation measure

*

Recommendation was made during site audit but improved/ rectified by the Contractor

N/A

Not Applicable at this stage as no such site activities were conducted in the reporting month

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Appendix H

Monthly Summary of Waste Flow Table

Sang Hing – Kuly Joint Venture
Environmental Monthly Report for Contract No. DC/2014/01
Castle Peak Road Trunk Sewer and Tuen Mun Village Sewage

Name of Department: DSD

Contract No.: DC/2014/01

Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
Total Quantity Generated (in '000m ³)	Hard Rock and Large Broken Concrete (in '000m ³)	Reused in the Contract (in '000m ³)	Reused in other Projects (in '000m ³)	Disposed as Public Fill (in '000m ³)	Imported Fill (in '000m ³)	Metals (in '000 kg)	Paper/ cardboard packaging (in '000kg)	Plastics (see Note 3) (in '000kg)	Chemical Waste (in '000kg)	Others, e.g. general refuse (in '000m ³)
27	10	8	1	1	0	2	1	1	1	2

Notes:

- (1) The performance targets are given in ETWB Technical Circular PS Clause 6(14).
- (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
- (4) *The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m³. (ETWB Technical Circular PS Clause 5(4)(b) refers).
 [Delete Note (4) and the table above on the forecast, where inapplicable].